

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

**TQ DELTA, LLC,  
Plaintiff,**

V.

**COMMScope Holding Company, Inc., Commscope Inc., Arris International Limited, Arris Global Ltd., Arris US Holdings, Inc., Arris Solutions, Inc., Arris Technology, Inc., and Arris Enterprises, LLC,**

**NOKIA CORP., NOKIA SOLUTIONS  
AND NETWORKS OY, and NOKIA OF  
AMERICA CORP.**

**Defendants.**

## JURY TRIAL DEMANDED

**Civil Action 2:21-cv-310-JRG**  
**(Lead Case)**

**Civil Action No. 2:21-cv-309-JRG**  
**(Member Case)**

## PLAINTIFF TQ DELTA'S REPLY CLAIM CONSTRUCTION BRIEF

## **I. Terms in Multiple Patent Families**

### **A. “Transceiver”**

The accepted meaning of “transceiver”—which refers to a single device that can both transmit and receive—requires that the transmitter and receiver portions share common circuitry, as the Delaware Court found. Otherwise, it would not be a single device. Defendants criticize the Delaware Court for relying on dictionaries, but *Phillips* explains that reliance on dictionaries may be proper because they “endeavor to collect the accepted meanings of terms used in various fields of science and technology[.]”. 415 F.3d 1303, 1318 (Fed. Cir. 2005) (en banc); Opening Br. at 3.

### **B. “Operable To” / “Configurable To”**

These terms mean “able to operate” and “able to be configured,” which reflect capabilities. *See, e.g., e-Watch Inc. v. Apple, Inc.*, 2015 U.S. Dist. LEXIS 37216, at \*24–25 (E.D. Tex. 2015) (explaining that “being operable to” claim language, for example, showed that “patentee understood how to draft claim language that referred to the capabilities of an element”); *Iron Oak Techs., LLC v. Microsoft Corp.*, 857 F. App’x 644, 649 (Fed. Cir. 2021) (non-precedential) (explaining that a mobile device “operable to create patched operating code . . .” meant that the device “simply must have the capability of creating patched operating code . . .”).

The claims do not recite the narrower term “configured to.” But even if they did, Defendants’ construction is still wrong. In *Huawei*, which Defendants cite, the Court concluded that “configured to” (and “adapted to”) do not “encompass[] structure that is merely capable of performing the functions in the abstract.” 2021 U.S. Dist. LEXIS 7944, at \*60 (E.D. Tex. 2021) (emphasis added). The Court held that the term “does not encompass structure that may be modified to perform that function but is not in that modified state”; it did not hold that the structure must be in operation in order to infringe (which would improperly convert the claims into methods) *Id.* And the Court did not include Defendants’ limitation in its construction. *See id.*

TQ Delta is also not proposing that the claims encompass mere capability to perform a function in the abstract, such as through re-writing code. Here, the relevant structure is likely reflected in software, firmware, and/or hard-coded circuitry. It established law that “when ‘a user must activate the functions programmed into a piece of software by selecting those options, the user is only activating the means that are already present in the underlying software.’” *Versata Software, Inc. v. SAP Am., Inc.*, 717 F.3d 1255, 1262 (Fed. Cir. 2013) (collecting cases); *VirnetX Inc. v. Apple Inc.*, 792 F. App’x 796, 808 (Fed. Cir. 2019) (non-precedential) (“When it is ‘undisputed that software for performing the claimed functions existed in the products when sold,’ infringement occurs when the party sells those products.”) (citation omitted). But this question is the ultimate infringement issue, not claim construction. Defendants’ “not mere capability” negative limitation is unhelpful and ambiguous to the jury. It should not be adopted.

## **II. Family 1 Terms**

### **A. “Each Bit In The Diagnostic Message Is Mapped To At Least One DMT Symbol”**

Defendants’ only support is Dr. McNair’s declaration, which contradicts the intrinsic record. Dr. McNair asserts, without explanation, that this term is not “precise enough to afford clear notice of what is claimed” because a mapping function is needed. Resp. at 6. Whether a mapping function is needed to understand a particular implementation of a “one bit per DMT symbol modulation scheme” does not mean that the term is indefinite. It simply means, assuming Dr. McNair is correct, that a mapping function may be utilized for two transceivers to communicate in a particular scheme. If anything, Dr. McNair’s opinion indicates that he does understand how “each bit in the diagnostic message is mapped to at least one DMT symbol,” depending upon the mapping function utilized, and that the term is not indefinite.

Defendants respond to the column 3 example of the REVERB1/SEQUE1 “one bit per DMT

symbol encoding scheme” by asserting that “this language references mapping to a particular *signal*, not a *symbol*.” Resp. at 6 (emphases in original). But a signal and a symbol are not exclusive. A symbol is the time division of a signal. Defendants’ argument strains credibility.

Defendants incorrectly assert that the REVERB1/SEQUE1 is the specification’s “single description of the term ‘mapped.’” *Id.* Immediately above the REVERB1/SEQUE1 example is the C-RATES1 standard example that explains that bits are “modulated by using one bit per DTM symbol modulation.” ’686 Patent, at 3:44-49; Exh. 26, at 107 (“Only one bit of information is transmitted in each symbol of C-RATES1: a zero bit is encoded to one symbol of C-REVERB1 and a one bit is encoded to one symbol of C-SEQUE1 . . .”). This disclosure contradicts Defendants’ assertion that the concept of mapping is indefinite.

Defendants next assert that “[a] POSITA would not understand how a bit in a message could be ‘mapped’ to more than one DMT symbol.” Resp. at 6. The answer is apparent: a single bit could be repeated in the next symbol (such as in the above, for a REVERB1 signal that could span multiple symbols). This is consistent with the goal of providing a more robust communication scheme using a one bit per DMT symbol communication scheme.

#### **B. “Array Representing Frequency Domain Received Idle Channel Noise Information”**

TQ Delta submits the term “array” should be construed to assist the jury. Defendants do not substantively dispute TQ Delta’s construction of “array.” For the “idle channel noise” term, Defendants argue that “the transceiver must be ‘off.’” Resp. at 7. But the claim only requires that one channel is idle—the “idle channel”—and is silent about what may or may not be transmitting on other channels. TQ Delta’s construction follows that claim language. Defendants’ construction improperly narrows the claim (to an impractical or impossible degree) by requiring a complete absence of transmission on every channel, not just the channel being measured.

### III. Family 2 Terms

#### A. “Plurality of Bonded Transceivers”

Defendants do not provide a reason to depart from the Delaware Court’s holding that “the recited ‘plurality of bonded transceivers’ need not be actively bonding.” *Family 2 Op.* (Dkt. 124-21), 2018 U.S. Dist. LEXIS 19913, at \*17—a holding they do not address at all. Nor do they explain the requirement that each transceiver “correspond[s] to one of the physical links,” language the Delaware Court also declined to adopt. *See id.* They also admit that their position—that the transceivers “must actually *do something*,” Resp. at 9 (emphasis added)—conflicts with established Federal Circuit law that apparatus claims cover “what a device *is*, not what a device *does*.” *Hewlett-Packard Co. v. Bausch & Lomb, Inc.*, 909 F.2d 1464, 1468 (Fed. Cir. 1990) (emphases in original). And they rely on a case that does not apply because a “bonded transceiver” is a structure. *Typhoon Touch Techs., Inc. v. Dell, Inc.*, 659 F.3d 1376, 1380–81 (Fed. Cir. 2011) (construing “memory for storing” function as requiring “that the device is structured to store at least one data collection application”). TQ Delta’s construction is correct.

#### B. “Reduce A Difference In Latency Between The Bonded Transceivers”

Defendants ignore the Delaware Court’s Orders—rejecting the same construction and definiteness challenges they propose here. *Family 2 Op.* (Dkt. 124-21), 2018 U.S. Dist. LEXIS 19913, at \*25–26; *Family 2 SJ. Op.* (Dkt. 124-22), 373 F. Supp. 2d. at 523–24. They instead raise two issues. The first is a wire-latency argument that is misplaced: if utilizing the configuration parameters does not reduce a difference in overall latency between transceivers (*e.g.*, due to large hypothetical differences in wire latency), there would be no infringement under Defendants’ view of the term. That is not a definiteness issue—when the configuration parameters did reduce latency, the claims would be met. Defendants’ rewriting of “reduce” as “minimize” based on the disclosure of “only a single embodiment” (Resp. at 12) is also incorrect. Defendants do not point

to any lexicography or disclaimer, and “[t]he Federal Circuit has ‘expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment.’” *Secure Access LLC v. HP Enter. Servs.*, 2016 U.S. Dist. LEXIS 154352, at \*27 (E.D. Tex. 2016) (collecting authority). The Patents’ disclosure of a buffer to account for differences in delay (regardless of the embodiment) further shows that those in the art understand that “reduce” does not mean “minimize” because the differences may be buffered.

#### **IV. Family 3 Terms**

##### **A. “Shared Memory”**

Defendants again ignore the Delaware Court’s Orders. *Family 3 Op.* (Dkt. 124-23), 2017 U.S. Dist. LEXIS 206989, at \*7; *Family 9 Op.* (Dkt. 124-24), 2018 U.S. Dist. LEXIS 77271, at \*19–24. They now (after losing a validity trial in *2Wire*) read the word shared out of “shared memory” with their “plain and ordinary” construction—claiming that the term encompasses using multiple memories that are not shared memory, *e.g.*, “two functions can be assigned to a shared memory such that the functions use different memory spaces without ever using the same portion of the shared memory,” Resp. at 13. There is no record support for that position. The plain meaning of a “shared” resource is that it can be used by multiple things (*e.g.*, a car shared between two people is one that both people can access and drive). The Delaware Court was correct.

##### **B. “Wherein the Generated Message Indicates How The Memory Has Been Allocated Between The [First Deinterleaving / Interleaving] Function And The [Second] Deinterleaving Function” / “A Message Indicating How The Shared Memory Is To Be Used By the Interleaver Or Deinterleaver”**

Defendants do not identify a claim-scope dispute or what their construction excludes that the plain claim language would encompass. The Delaware Court was addressing a claim-scope dispute—if indicating “how the memory has been allocated” was limited to indicating “a number of bytes of memory.” *Family 3 Op.* (Dkt. 124-23), 2017 U.S. Dist. LEXIS 206989, at \*12–24.

Given that Defendants now “agree not to assert that the meaning of this claim language is limited to indicating ‘a number of bytes of memory,’” there is no need to construe this term.

**C. “Specifying A Maximum Number of Bytes of Memory That Are Available To Be Allocated To [A/An Interleaver/Deinterleaver]”**

Defendants’ late attempt to construe this term should be rejected. They did not raise any construction in the P.R. 4-3 statement and thus waived the issue. Dkt. 107-2, at 10 (“Plain and ordinary meaning”). Defendants now raise an (incorrect) improper infringe argument.

**V. Family 4 Patents**

**A. “Phase Characteristic(s)”**

The parties before the Delaware Court contested the meaning of this term, which was the subject of multiple claim construction and summary judgment proceedings. Defendants lost. Defendants now retreat to “plain and ordinary meaning” and decline to provide any explanation of what that means. Defendants complain that TQ Delta’s construction is confusing and requires explanation of QAM symbol constellation points. But that is not a *Markman* argument, and QAM encoding will need to be explained to the jury as background of the technology anyway.

Defendants also attempt to find a contradiction between TQ Delta’s construction here and its statements in Delaware. But Defendants mischaracterize those statements. The fact that there may be “infinite” ways to express phase characteristics says nothing about whether TQ Delta’s proposed construction is overly restrictive. A reading of the transcript reveals only that the number of QAM constellation points is potentially infinite depending on the level of complexity desired. That is merely a statement regarding the infinite nature of numbers, not an admission that TQ Delta’s proposed construction is incorrect or inconsistent with something said in Delaware.

**B. “Substantially Scramble The Phase Characteristics Of The Plurality of Carrier Signals”**

Claiming a functional result is not *per se* improper, and the *Echolab* case does not hold

otherwise. *Cf. Ecolab, Inc. v. Envirochem, Inc.*, 264 F.3d 1358, 1367 (Fed. Cir. 2001) (“The ’818 written description does not reveal any special definition for the terms ‘substantially’ or ‘uniform’ or the phrase ‘substantially uniform.’”). The claim language here already claims a result, namely “combining . . . to substantially scramble the phase characteristics of the plurality of carrier signals.” TQ Delta’s proposed construction simply defines what that claimed result—“to substantially scramble”—means. And unlike the *Echolab* case, the specification is rife with statements that substantially scrambling the carrier signals means producing a transmission signal with reduced PAR. ’008 Patent at (57); *id.* at 1:26-29; 2:44-47; 6:49-53.

### **C. “Same Bit Value”**

Defendants contrive an indefiniteness argument based on a false dichotomy that the Patent discloses two different concepts: 1) “same input data bits” (or “input data bit”) which Defendants’ contend means the bit position in a data stream, and 2) “bit value” which refers to the actual value of the bit, 0 or 1. Resp. at 17-18. Defendants are further categorically incorrect that TQ Delta ever took a position in Delaware that “same bit value” means same bit position. Resp. at 17 (“TQ Delta adopted the former construction (same bit position) in Delaware, but now proposes a different construction (value of the same bit)”). TQ Delta’s position is the same, that “same bit value” means “value of the same bit.” Defendants only support that “same input data bit” is a different concept than “bit value,” creating alleged indefiniteness, is the unsupported statement of Dr. Zimmerman. The Delaware Court soundly rejected this argument (which Defendants omit): “[t]he bit values that are demodulated on the receiving side mirror the bit values that are modulated on the transmitting side. It makes sense, therefore, that the term ‘same [input] bit value’ refers to ‘value of the same bit.’” *Family 4 Op.* (Dkt. 124-25), 2018 U.S. Dist. LEXIS 13737, at \*13–17.

### **D. “Computing A Phase Shift For Each Carrier Signal” and “Combining The Phase Shift Computed For Each Respective Carrier Signal With The Phase Characteristic Of That Carrier Signal”**



These terms should be construed according to plain meaning. The claim omits the limitation “computing the amount,” even though the specification uses the word “amount of the phase shift” (in a different context, as described below), indicating that had the patentee intended to limit the claims to computing an amount, he could have done so. The portions of the specification Defendants cite do not support their construction. Defendants rely on column 6:41-46, but that language cuts against their construction. It merely states that the “DMT transmitter 22 then computes (step 115) the phase shift that is used to adjust the phase characteristic of each carrier signal.” It does not say “compute the amount.” The next sentence, column 6:43-45, states: “The amount of the phase shift combined with the phase characteristic of each QAM-modulated carrier signal depends upon the equation used and the one or more values associated with that carrier signal.” This indicates that the amount of the phase shift depends on the equation used, not that the system must compute the amount. Indeed, the entire discussion in columns 5 and 6 lack any intent to limit the claims to computing an “amount” and, in fact, contradict such a limitation.

## **VI. Family 6 Terms**

### **A. “Steady-State Communication”**

In five places, the Patents define a steady-state communication as “Showtime.” ’348 Patent at 2:43–49 (“steady state data transmission (i.e., Showtime)”); *id.* at 4:3–7 (“It is important to note that steady-state transmission during which user information is transmitted is known as ‘Showtime’ in XDSL systems . . . .”); *id.* at 4:25–31 (“steady-state transmission, i.e., Showtime for DSL systems”); *id.* at 8:25–27 (“regular, i.e., Showtime, operation”); *id.* at 9:40–43 (“regular steady-state transmission, i.e., Showtime in ADSL”). The term “Showtime” appears over 50 times, reinforcing that the Family 6 Patents are about xDSL systems. That definition should apply.

### **B. “Flag Signal”**

Defendants do not identify a claim-scope dispute with TQ Delta’s proposed construction,

which was agreed-to in Delaware. A flag signal, as the Patents teach (Opening Br. at 21), is different than message data, which Defendants do not meaningfully contest.

**C. “FIP Setting,” “FIP Value,” and “Interleaver Parameter Value”**

Defendants ignore the provisional application’s disclosure of “FIP settings” and “FIP values”—which includes parameters besides the four that Defendants limit this term to. Opening Br. at 22–24. That disclosure shows that Defendants’ construction is wrong. The remainder of Defendants’ arguments were rejected by the Delaware Court (*e.g.*, that measuring interleaver depth is not limited to “codeword size”), holdings that Defendants do not substantively address.

**VII. Family 9 Terms**

**A. “Higher Immunity to Noise”**

The only part of the Patents that mention messages that have a higher immunity to noise ties it to a higher SNR margin. ’348 Patent, at 16:4–9. While Defendants note that this disclosure is an “alternative[]” (“or in addition”) embodiment, the claims are dependent claims drawn to that embodiment. And Defendants’ cited portions do not refer to a message having a higher immunity to noise (they mention “robustness,” including by sending the same message multiple times).

**B. The “Using” Terms**

This challenge lacks merit. It is undisputed that the Patents disclose that the transmitter performs interleaving and coding and, conversely, the receiver performs deinterleaving and decoding. ’348 Patent, at 9:41–49. While Defendants claims that this is “illogical,” Resp. at 26, that unsupported belief is not the clear-and-convincing evidence required to invalidate the claims.

**C. “Receive At Least One Message Without Interleaving”**

TQ Delta omitted the claims in which this term appears from its Preliminary Election of Asserted Claims. TQ Delta thus submits that the Court need not address this term.

**VIII. Family 10 Terms**

**A. “A Multicarrier Communications Transceiver Operable To: Receive A Multicarrier Symbol Comprising A First Plurality Of Carriers”**

There is no dispute that those skilled in the know what a “multicarrier symbol” is. *See* Resp. at 27–28 (claiming it is the “sum of the full collection of carriers modulated by the system”). Even under Defendant’s view, those in the art would understand that there are “a plurality of carriers” contained within a “full collection of carriers.” But Defendants assert indefiniteness that the Patents allegedly do not explain “how a multicarrier symbol is subdivided into different subsets of carriers.” *Id.* That is not a definiteness argument (which is about understanding the scope of the claims); it is an incorrect written description or enablement argument. The term is definite.

**B. “Receive A First Plurality Of Bits On The First Plurality Of Carriers Using A First SNR Margin; Receive A Second Plurality Of Bits On The Second Plurality Of Carriers Using A Second SNR Margin” and “Wherein The First SNR Margin Provides More Robust Reception Than The Second SNR Margin”**

Defendants do not claim that the language renders these terms uncertain in scope. Indeed, the Patents explain that (1) the language refers to receiving bits on carriers where an SNR margin was used to perform bit loading and (2) robustness refers to maintaining a required bit-error rate. *See* Opening Br. at 28–29. Defendants do not address this evidence. They instead claim that the Patents “fail[] to describe *how* the SNR Margin is used to ‘receive’ a [first/second] plurality of bits” and “*how* the first SNR margin (at the carrier level) “provides more robust reception” than the second SNR margin (at the carrier level). Resp. Br. at 29 (emphasis in original). Again, that is a misplaced written description or enablement argument, not a definiteness challenge.

**C. “Signal To Noise Ratio (SNR) Margin” / “SNR Margin”**

Defendants fail to identify any claim-scope issue. There is no need to construe this term.

**IX. CONCLUSION**

TQ Delta thus respectfully requests that the Court enter TQ Delta’s proposed constructions.

Dated: May 13, 2022

Respectfully submitted,

By: /s/ William E. Davis, III  
William E. Davis, III  
Texas State Bar No. 24047416  
bdavis@davisfirm.com

Christian J. Hurt  
Texas State Bar No. 24059987  
churt@davisfirm.com

Edward Chin  
Texas State Bar No. 50511688  
echin@davisfirm.com

Rudolph "Rudy" Fink IV  
Texas State Bar No. 24082997  
rfink@davisfirm.com

**The Davis Firm PC**  
213 N. Fredonia Street, Suite 230  
Longview, Texas 75601  
Telephone: (903) 230-9090  
Facsimile: (903) 230-9661

**ATTORNEYS FOR PLAINTIFF  
TQ DELTA, LLC**

**CERTIFICATE OF SERVICE**

The undersigned certifies that the foregoing document is being filed electronically in compliance with Local Rule CV-5(a). As such, this document is being served this May 13, 2022, on all counsel of record, each of whom is deemed to have consented to electronic service. L.R. CV-5(a)(3)(A).

/s/ William E. Davis, III  
William E. Davis, III